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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/559,684

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Teiichi Inada

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EXAMINER

SELLERS, ROBERT E

ART UNIT

PAPER NUMBER

1712

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/12/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/559,684

Applicant(s)

INADA ET AL.

Examiner

Robert Sellers

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7, 9-11, 16-19, 22, 23, 26-29 and 41-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-11, 16-19, 22, 23, 26-29 and 41-43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

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1. The restriction portion of the restriction and election of species requirement mailed December 4, 2006 has been rendered moot by the cancellation of claims 8, 12, 20, 21, 24, 25, 30 and 31 of Groups II and III in the amendment filed February 2, 2007.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 42 and 43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

2. Claims 42 and 43 are dependent upon cancelled claim 8.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Omum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-7, 9-11, 16-19, 22, 23, 26-29 and 41-43 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-18 of copending application no. 11/319,068 having the common inventor of Teichi Inada. Although the conflicting claims are not identical, they are not patentably distinct from each other.

3. The copending application claims an adhesive film prepared from an epoxy resin, curing agent, an incompatible polymer including a minimum of 50.0% by weight (claim 17) of an epoxy group-containing acrylic copolymer (claims 8 and 9) having a weight average molecular weight of at least 100,000 (claim 11) and a glass transition temperature  $T_g$  of from  $-50^{\circ}\text{C}$  to  $30^{\circ}\text{C}$  (claim 12), and, optionally, from 0.45% to 10.0% by weight of a filler. The instant specification on page 16, the first full paragraph, describes an epoxy group-containing (meth)acrylic copolymer having a weight average molecular weight of 100,000 as a particularly preferred polymer component in a preferred amount of 50% by weight or less. (pages 16-17, bridging paragraph) preferably combined with a thermosetting component (page 14, first full paragraph, lines 7-11) such as the preferred epoxy resin (page 17, first full paragraph).

4. Although the breaking strength and breaking elongation of claim 1 and the elastic moduli of claims 2 and 3 are not claimed, based on the equivalent blends of epoxy resin and epoxy group-containing acrylic copolymer within the proportions of instant claim 19, the adhesive film of the copending application inherently exhibits the properties of instant claims 1-5, 16 and 17.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-7, 9-11, 16-19, 22, 23, 26-29 and 41-43 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-15, 21 and 22 of Tomiyama et al. Patent No. 7,070,670 having the common inventors of Teichi Inada and Michio Uruno. Although the conflicting claims are not identical, they are not patentably distinct from each other.

5. Tomiyama et al. claims an adhesive film possessing a storage elastic modulus of from 20 to 2000 MPa at 25°C (claim 21) and a residual volatile component of 3.0% or less (claim 22) comprising A an epoxy resin and curing agent with B a polymer compound with a weight average molecular weight of at least 100,000 such as an epoxy group-containing acrylic copolymer having a Tg of from -50°C to 0°C (claim 8) in a calculated amount of from 9.1% to less than 50% by weight and from 1 to 50 parts by volume per 100 parts by volume of resin of an inorganic filler (claim 12).

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6. Based on the equivalent mixtures of epoxy resin and epoxy group-containing acrylic copolymer within the proportions of instant claim 19, the adhesive film of Tomiyama et al. inherently exhibits the properties of instant claims 1-5, 16 and 17.

Claims 1-7, 9-11, 16-19, 22, 23, 26-29 and 41-43 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 7, 8, 10, 17, 18, 20 and 24 of Inada et al. Patent No. 5,965,269. Although the conflicting claims are not identical, they are not patentably distinct from each other.

7. Inada et al. claims an adhesive film (claim 20) obtained from an epoxy resin, curing agent, compatible high molecular weight component such as a phenoxy resin (deemed to be a suitable species of polymer component in a mixture according to page 16, first full paragraph, lines 4-6 of the instant specification) and a calculated proportion of from 11.4% to 47.6% relative to the aforementioned components of (3) an incompatible high molecular weight component having a weight average molecular weight of at least 30,000 and such as an epoxy group-containing acrylic rubber having a T<sub>g</sub> of at least -10°C (claim 10) and, optionally, from 13% to 38% by volume of an inorganic filler (claims 17 and 18).

8. Based on the equivalent mixtures of epoxy resin and epoxy group-containing acrylic copolymer within the proportions of instant claim 19, the adhesive film of Inada et al. inherently exhibits the properties of instant claims 1-5, 16 and 17.

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 11, 41 and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by Yanagiuchi et al. Patent No. 6,521,337.

9. Yanagiuchi et al. (Figure 1 and col. 3, lines 20-24) shows an adhesive layer having a thickness of from about 5 to about 100  $\mu\text{m}$  (col. 3, line 66 to col. 4, line 2) prepared from the elected species of an acrylic resin (col. 3, lines 52-60 and col. 8, Example 1, lines 33-36) exhibiting a breaking strength of from about 0.196 MPa to about 4.9 MPa (col. 2, lines 43-49) and a breaking elongation of from about 10% to about 150% (col. 2, lines 50-61).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-5, 16, 17, 28 and 29 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yanagiuchi et al. Yanagiuchi et al. is discussed in paragraph 9 hereinabove. The claimed elastic moduli is not recited. Based on the acrylic rubber adhesive layer of Yanagiuchi et al. having a breaking strength and breaking elongation within and embracing, respectively, the claimed limits, the elastic moduli are inherent. The burden of proof shifts to applicants to rebut the inherent elastic moduli possessed by the adhesive layer of Yanagiuchi et al. (*In re Fitzgerald*, 205 USPQ 594, CCPA 1980 and MPEP §§ 2112-2112.02).

Claims 1-7, 9-11, 16-19, 22, 23, 26-29 and 41-43 are rejected under 35 U.S.C. 102(a, b or e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over the following references:

- 1) Inada et al.
- 2) Tomiyama et al.
- 3) Shimada et al. Patent No. 6,090,468
- 4) Yamamoto et al. Patent No. 6,265,782
- 5) Tanaka et al. Patent No. 6,673,441
- 6) Teiichi et al. Publication No. 2003/0069331
- 7) Japanese Patent No. 9-298369
- 8) Japanese Patent No. 9-302313
- 9) Japanese Patent No. 2000-248025
- 10) Japanese Patent No. 2002-60716

10. Inada et al. and Tomiyama et al. are described in previous paragraphs 5-8 and are representative of the cited prior art wherein adhesive films are derived from epoxy resins, epoxy group-containing acrylic copolymers with weight average molecular weights and Tg's encompassing the ranges of claims 6, 7, 18, 19 and 23 overlapping the maximum quantity of 50% by weight or less of claim 19, and, optionally, inorganic fillers. Elastic moduli within the confines of the elastic modulus at 25°C and 10 Hz of from 1 to 3000 MPa in claims 2 and 3 are reported.

11. The claimed breaking strength and breaking elongation values of claim 1, the second elastic modulus at 25°C and 900 Hz of claim 2, the second elastic modulus at -20°C and 10 Hz of claim 3, the third elastic modulus at 60°C and 10 Hz of claims 4 and 16, and the breaking strengths of claim 5 and 17 are not mentioned. Based on the equivalent mixtures of epoxy resin and epoxy group-containing acrylic copolymer within the proportions of instant claim 19, the adhesive films of the references inherently exhibit the properties of instant claims 1-5, 16 and 17.

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12. The burden of proof shifts to applicants to provide evidence that the mixtures of epoxy resins and epoxy group-containing acrylic copolymers with elastic moduli at 25°C within the claimed parameters do not exhibit the other claimed features

Claims 1-5, 16, 17, 29, 29 and 43 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Japanese Patent No. 2002-280494 (Japanese '494).

13. Japanese '494 sets forth a semi-cured polyamic acid film having an elastic modulus of 2000 MPa or less (PAJ abstract) and a thickness of from 10 to 300 microns (Derwent and CAPLUS abstracts) applied to the surface of a semiconductor wafer which is diced (PAJ abstract). The particular Tg and weight average molecular weight of claims 6, 7, 18, 19, 22 and 23 are not recited.

14. The prior art made of record and not relied upon is considered pertinent to the disclosure. Japanese Patent Nos. 2003-147299 and 2004-95844 are directed to adhesive layers containing an epoxy resin and an epoxy group-containing acrylic copolymer for a semiconductor to be diced which is the basis for the claimed subject matter according to page 5, the second paragraph of the specification.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Sellers whose telephone number is (571) 272-1093. The examiner can normally be reached on Monday to Friday from 9:30 to 6:00. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

rs  
3/6/2007



ROBERT E.L. SELLERS  
PRIMARY EXAMINER